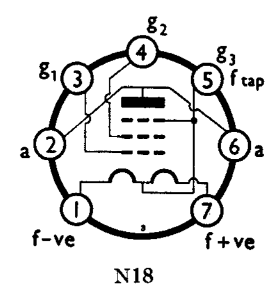


MINIATURE OUTPUT PENTODES 1·4/2·8V DIRECTLY HEATED

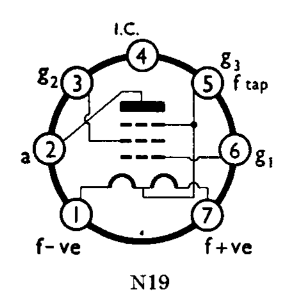
N18
N19

OCTOBER, 1951

BASE CONNECTIONS AND VALVE DIMENSIONS



N18



N19

View from underside of bases.

Base : B7G
Bulb : Tubular.

Overall length :	49—55	mm.
Seated length :	43—49	mm.
Max. diameter :	19	mm.

RATING

	Series	Parallel	
V_f	2·8	1·4	V
I_f	0·05 approx.	0·1 approx.	A
V_a	90 max.	90 max.	V
V_{g2}	90 max.	90 max.	V
*I_k	6 max.	6 max.	mA

*For each 1·4 volt filament section.

CAPACITANCES (of cold unscreened valve)

c_{a-all} 5·3 pF c_{g1-all} 5·6 pF c_{a-g1} 0·35 pF

TYPICAL OPERATION

Pentode connection :

	Series	Parallel		
V_a	90	85	90	V
V_{g2}	90	85	90	V
V_{g1}	−4·5	−5	−4·5	V
v_{in} (pk)	4·5	5	4·5	V
I_a (o)	7·7	6·9	9·5	mA
I_{g2} (o)	1·7	1·5	2·1	mA
r_a	0·12	0·12	0·1	MΩ
g_m	2	1·9	2·1	mA/V
R_a	10	10	10	kΩ
D	7	10	7	%
P_{out} (max. sig.)	240	250	270	mW

FILAMENT OPERATION

For parallel operation, pins 1 and 7 should be positive and pin 5 negative.

When operating the filament from a mains supply, the voltage should be adjusted to 1·3 per filament section or the current to 47·5 mA mean. Under certain conditions, particularly when series operated, a suitable shunt resistor will be required.

SCREENING

No internal or external screening is fitted to the valve.

MOUNTING

Any position.

RETAINING

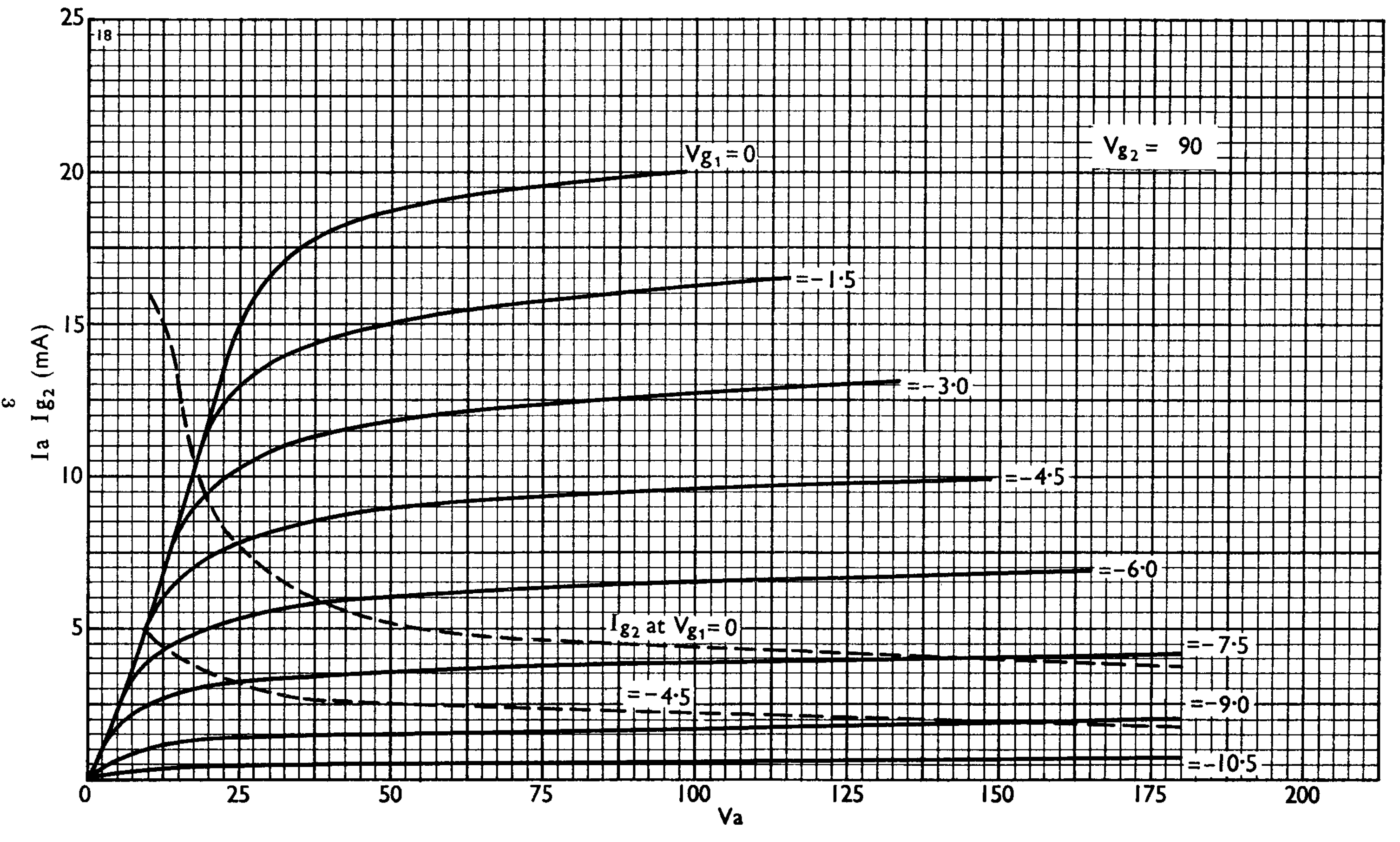
A retaining device should be used.

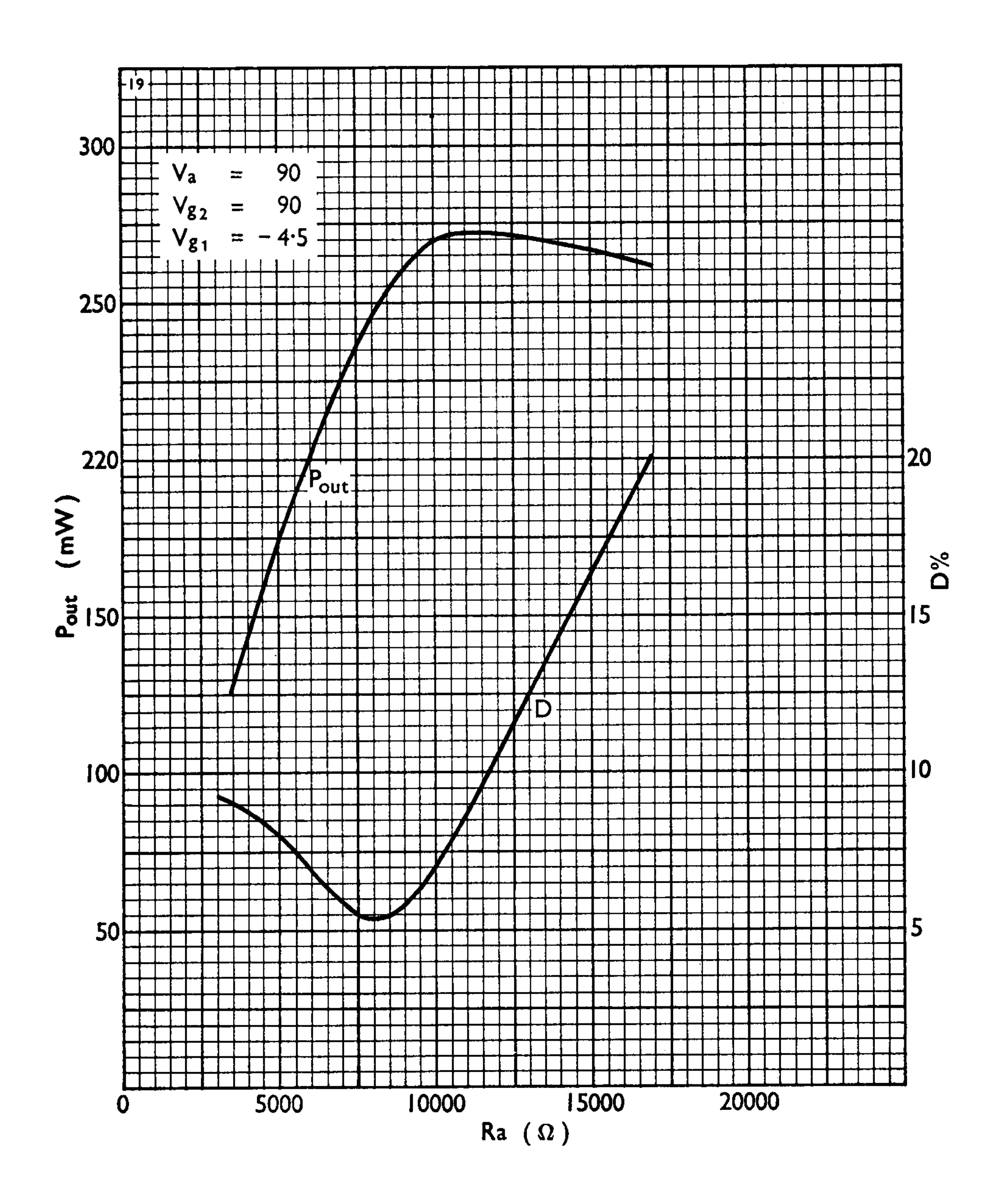
VENTILATION

No special precautions.

MICROPHONY

Although this is of a very low order, equipment should be designed to minimise microphony.


$V_{g_2} = 90$
$V_{g_1} = 0$
= −1·5
= −3·0
= −4·5
= −6·0
I_{g_2} at $V_{g_1} = 0$
= −7·5
= −4·5
= −9·0
= −10·5
Ia I_{g_2} (mA)
Va
18



19
V_a = 90
V_{g2} = 90
V_{g1} = −4·5
300
250
220
150
100
50
P_{out} (mW)
P_{out}
D
20
15
10
5
D%
0
5000
10000
15000
20000
Ra (Ω)